

# JAPAN

## EDICT OF GOVERNMENT

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JIS A 0203 (1980) (English): Concrete terminology

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*The citizens of a nation must  
honor the laws of the land.*

Fukuzawa Yukichi

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JAPANESE INDUSTRIAL STANDARD

Concrete Terminology

JIS A 0203—1980

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## JAPANESE INDUSTRIAL STANDARD

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## Concrete Terminology

A 0203-1980

### 1. Scope

This Japanese Industrial Standard specifies the principal terms, hereinafter referred to as the "terms", their reading, and definitions to be used concerning concrete.

Further, the equivalent English is shown for reference.

### 2. Classification

The terms shall be classified as follows:

- (1) Concrete
- (2) Materials
  - (a) Cement
  - (b) Admixture
  - (c) Aggregate
  - (d) Reinforcement
- (3) Properties of concrete and materials
- (4) Equipment and execution of works

### 3. Numbers, Terms, Readings and Definitions

The numbers, terms, readings and definitions shall be as follows:

- Remarks 1. Where two or more terms are described in one term column, any one of the terms may be used.
2. The term a part of which is shown in parentheses indicates that the term including the letters in the parentheses and also the term omitted with the letters in the parentheses may be used.

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Applicable Standards: See pages 27 and 28.

(1) Concrete

No.	Term	Reading	Definition	Reference
				Equivalent English
1001	Concrete	KONKURĪTO	A mixture of cement, water, fine aggregate, and coarse aggregate, as required with adding admixture.	concrete
1002	Plain concrete	PURĒN KONKURĪTO	Concrete without using chemical admixture, particularly air entraining agent.	plain concrete
1003	AE concrete	ĒI KONKURĪTO	Concrete in which micro air bubbles are contained schematically by using air entraining agent.	air entrained concrete
1004	Mortar	MORUTARU	A mixture of cement, water and fine aggregate, as required with adding admixture.	mortar
1005	Cement paste	SEMENTO PĒSUTO	A mixture of cement and water, as required with adding admixture.	cement paste
1006	Lightweight concrete	KEIRYŌ KONKURĪTO	Concrete of low mass made by using lightweight aggregate and by containing a large amount of air bubbles.	lightweight concrete
1007	Lightweight aggregate concrete	KEIRYŌ KOTSUZAI KONKURĪTO	Concrete of low mass made by using lightweight aggregate.	lightweight aggregate concrete
1008	Heavy (-weight) concrete, high density concrete	JŪRYŌ KONKURĪTO	Concrete of high mass made by using heavy-weight aggregate.	heavy (-weight) concrete, high density concrete

No.	Term	Reading	Definition	Reference
				Equivalent English
1009	Plain concrete, unreinforced concrete	MUKIN KONKURĪTO	Concrete without reinforcement.	plain concrete, unreinforced concrete
1010	Reinforced concrete	TEKKIN KONKURĪTO	Concrete containing adequate reinforcement.	reinforced concrete
1011	Steel framed reinforced concrete	TEKKOTSU TEKKIN-KONKURĪTO	Concrete reinforced by steel frame and reinforcement.	steel framed reinforced concrete
1012	Prestressed concrete	PURESUTO-RESUTO KONKURĪTO	Concrete given with prestress.	prestressed concrete

(2) Materials(a) Cement

No.	Term	Reading	Definition	Reference
				Equivalent English
2101	Cement	SEMENTO	Mineral powders which harden by reaction with water.	cement
2102	Portland cement	PORUTORAND SEMENTO	A cement produced by pulverizing clinker consisting essentially of hydraulic calcium silicates and added with a proper amount of gypsum.	portland cement
2103	Ordinary portland cement	FUTSŪ PORUTORANDO SEMENTO	A portland cement used most generally and specified in JIS R 5210.	ordinary portland cement

No.	Term	Reading	Definition	Reference
				Equivalent English
2104	High-early-strength portland cement	SŌKYŌ PORUTORANDO SEMENTO	A portland cement adjusted so as to produce earlier strength particularly and specified in JIS R 5210.	high-early-strength portland cement
2105	Ultra high-early-strength portland cement	CHŌSŌKYŌ- PORUTORANDO SEMENTO	A portland cement adjusted so as to produce earlier strength further than the high-early-strength portland cement and specified in JIS R 5210.	ultra high-early-strength portland cement
2106	Sulfate resisting portland cement	TAIRYŪSANEN- PORUTORANDO SEMENTO	A portland cement adjusted for tricalcium aluminate to be reduced so as the resistance against corrosion by sulfate particularly to become large, and specified in JIS R 5210.	sulfate resisting portland cement
2107	Moderate heat portland cement	CHŪYŌNETSU PORUTORANDO SEMENTO	A portland cement so adjusted that the heat of hydration particularly becomes small and specified in JIS R 5210.	moderate heat portland cement
2108	White portland cement	HAKUSHOKU PORUTORANDO SEMENTO	A white portland cement having low iron content so as the colour of cement paste to become white even after hardening.	white portland cement
2109	Blended cement	KONGŌ SEMENTO	A cement consisting essentially of portland cement, blended with the materials consisting essentially of silica and lime substances such as pozzolan, rapidly cooled blast-furnace slag, etc.	blended cement
2110	Portlment blast-furnace slag cement	KŌRO SEMENTO	A blended cement using rapidly cooled blast-furnace slag and specified in JIS R 5211.	portlment blast-furnace slag cement

No.	Term	Reading	Definition	Reference
				Equivalent English
2111	Portland pozzolan cement	SHIRIKA SEMENTO	A blended cement using pozzolan other than fly-ash and specified in JIS R 5212.	portland pozzolan cement
2112	Portland fly-ash cement	FRAIASSHU SEMENTO	A blended cement using fly-ash and specified in JIS R 5213.	portland fly-ash cement
2113	High alumina cement	ARUMINA SEMENTO	A cement produced by pulverizing clinker consisting essentially of hydraulic calcium aluminate.	high alumina cement

(b) Admixture

No.	Term	Reading	Definition	Reference
				Equivalent English
2201	Admixture	KONWAZAI-RYŌ	A material other than cement, water, aggregate and added immediately before or during mixing to give concrete or the like the particular properties.	admixture
2202	Admixture	KONWAZAI	Admixture of which volume is to be added to the mixed volume of concrete or the like.	admixture
2203	Pozzolan	POZORAN	Pulvererized silica material which has almost no hydraulic property but hardness by making insoluble compound based on the gradual reaction with calcium hydroxide under existence of water at ordinary temperature.	pozzolan

No.	Term	Reading	Definition	Reference
				Equivalent English
2204	Fly ash	FRAIASSHU	A kind of pozzolan collected from the waste gas of pulverized-coal burning boiler, and specified in JIS A 6201.	fly ash
2205	Blast-furnace slag	KŌRO SURAGU	Mineral material consisting of compounds such as silica, alumina, lime, etc. generated from iron ores and lime stones melt in a blast furnace.	blast furnace slag
2206	Chemical admixture, additive	KONWAZAI	Admixture of which volume is not to be added to the mixed volume of concrete or the like in usual case, or is capable of substituting with mixing water.	chemical admixture, additive
2207	Surface active agent	HYŌMEN KASSEIZAI	Chemical admixture to change the properties of concrete or the like according to surface active actuation.	surface active agent
2208	AE agent	ĒIZAI	Chemical admixture to distribute many minute bubbles of air uniformly in concrete or the like.	air entraining agent
2209	Water reducing agent	GENSUIZAI	Chemical admixture to improve workability without increasing the quantity per unit volume of concrete or the like, or to decrease the water quantity per unit volume without changing the workability.	water reducing agent
2210	Set accelerating agent	KYŪKETSUZAI	Chemical admixture to be used to accelerate hydration reaction of cement and the decrease remarkably shorter the set period of time.	set accelerating agent

No.	Term	Reading	Definition	Reference
				Equivalent English
2211	Accelerator	KŌKA SOKUSHINZAI	Chemical admixture used for accelerating the reaction of hydration of cement to make the strength of primary age larger.	accelerator
2212	Retarder	GYŌKETSU CHIENZAI	Chemical admixture used for retardating the reaction of hydration to make the period of time required for set longer.	retarder

(c) Aggregate

No.	Term	Reading	Definition	Reference
				Equivalent English
2301	Aggregate	KOTSUZAI	Granular material, such as sand, gravel, crushed stone and the like mixed with cement and water to make mortar or concrete.	aggregate
2302	Fine aggregate	SAIKOTSUZAI	Aggregate entirely passing the 10 mm sieve and passing the 5 mm sieve by 85 % or more in mass.	fine aggregate
2303	Coarse aggregate	SOKOTSUZAI	Aggregate retaining on the 5 mm sieve by 85 % or more in mass.	coarse aggregate
2304	Sand	SUNA	Fine aggregate resulted from rock by natural action.	sand
2305	Gravel	JARI	Coarse aggregate resulted from rock by natural action.	gravel

No.	Term	Reading	Definition	Reference
				Equivalent English
2306	Cobble stone, boulder	TAMAISHI	A rounded stone of 10 to 30 cm in diameter.	cobble stone, boulder
2307	Crushed sand	SAISA	Fine aggregate made artificially by crushing rock by crusher or the like.	crushed sand
2308	Crushed stone	SAISEKI	Coarse aggregate made artificially by crushing rock by crusher or the like.	crushed stone
2309	Light-weight aggregate	KEIRYŌ KOTSUZAI	Aggregate having a smaller specific gravity than the normal rock for the purpose of reducing the mass of concrete.	lightweight aggregate
2310	Natural lightweight aggregate, pumice	TENNEN KEIRYŌ KOTSUZAI	Lightweight aggregate resulted naturally according to volcanic action or the like.	natural lightweight aggregate, pumice
2311	Artificial lightweight aggregate	JINKŌ KEIRYŌ KOTSUZAI	Lightweight aggregate made artificially using shale, cinder, blast-furnace slag, fly-ash, etc. as principal raw materials.	artificial lightweight aggregate
2312	Heavy-weight aggregate	JŪRYŌ KOTSUZAI	Aggregate with a larger specific gravity than that of the normal rock to be used for radiation shielding concrete.	heavy-weight aggregate
2313	Standard sand	HYŌJUNSA	The specified sand to be used for mortar for cement-strength test and the natural silicate sand resulted from TOYOURA specified in JIS R 5201.	standard sand

(d) Reinforcement

No.	Term	Reading	Definition	Reference
				Equivalent English
2401	Rein- forcement	TEKKIN	Steel bar embedded in concrete at a proper position to reinforce.	rein- forcement
2402	Rein- forcing bar	TEKKIN KONKURĪTO YŌ BŌKŌ	Steel bars to be used for concrete reinforcement and specified in JIS G 3112.	rein- forcing bar
2403	Deformed reinforcing bar	IKEIBŌKŌ	Reinforcement provided with protrusions and others on the surface to improve adhesion to concrete and specified in JIS G 3112.	deformed reinforcing bar

(3) Properties of Concrete and Materials

No.	Term	Reading	Definition	Reference
				Equivalent English
3001	Set	GYŌKETSU	The condition to become hard by gradual loss of fluidity due to action of hydration after a certain lapse of time since mixing the cement with adding water. The test method of set time is specified in JIS R 5201.	set
3002	False set	GI GYŌKETSU	Phenomenon to indicate the state of set temporarily while adding water to cement or immediately thereafter without normal action of hydration.	false set
3003	Hardening	KŌKA	Phenomenon to increase the hardness and strength following the lapse of time after set of cement.	hardening

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No.	Term	Reading	Definition	Reference
				Equivalent English
3004	Heat of hydration	SUIWANETSU	Heat evolved by action of hydration of cement. The testing method is specified in JIS R 5203.	heat of hydration
3005	Fineness test	FUNMATSUDO SHIKEN	The test to examine the fineness of particles such as cement, fly ash, etc. and specified in JIS R 5201.	fineness test
3006	Soundness test (cement)	ANTEISEI-SHIKEN (SEMENTO NO)	The test to examine whether or not the stable action of hydration is carried out without causing abnormal volume change of cement and is specified in JIS R 5201.	soundness test (cement)
3007	Soundness test (aggregate)	ANTEISEI SHIKEN (KOTSUZAI NO)	The test to judge the durability of aggregate from the state of damaged aggregate by repeating the drying operation in a drying furnace by specified number of times after immersing the aggregate in the saturated solution of sodium sulfate and it is specified in JIS A 1122.	soundness test (aggregate)
3008	Ignition loss test	KYŌNETSU GENRYO SHIKEN	The test to obtain the loss of mass by igniting the sample at a definite temperature in order to confirm the degree of weathering in the case of cement and the completeness of burning in the case of artificial lightweight aggregate, and it is specified in JIS R 5202 concerning the cement.	ignition loss test

No.	Term	Reading	Definition	Reference
				Equivalent English
3009	Absolute dry-condition (aggregate)	ZETTAI KANSŌ JOTAI (KOTSUZAI NO)	The condition removed of the water contained in the aggregate particles by drying until constant mass at a temperature of 100 to 110°C.	absolute dry-condition (aggregate)
3010	Saturated surface-dry condition (aggregate)	HYŌMEN KANSŌ HŌSUIJOTAI (KOTSUZAI NO)	The condition where the aggregate has no surface moisture and the voids inside the aggregate particle are filled with water.	saturated surface-dry condition (aggregate)
3011	Surface moisture (aggregate)	HYŌMENSUI (KOTSUZAI NO)	The water adhering on the surface of aggregate and it is the whole water contained in the aggregate subtracted by the water inside the aggregate particles.	surface moisture (aggregate)
3012	Percentage of water absorption (aggregate)	KYŪSUIRITSU (KOTSUZAI NO)	The mass percentage of whole amount of water contained in aggregate under the saturated surface-dry condition to the mass of aggregate under the absolute-dry condition.	percentage of water absorption (aggregate)
3013	Percentage of water content (aggregate)	GANSUIRITSU (KOTSUZAI NO)	The percentage of total amount of sum of water contained in voids inside the aggregate particles and the surface moisture to the mass of aggregate under the absolute-dry condition.	percentage of water content (aggregate)

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No.	Term	Reading	Definition	Reference
				Equivalent English
3014	Specific gravity in saturated surface-dry condition (aggregate)	HYŌKAN HIJU (KOTSUZAI NO)	The value of mass of aggregate in saturated surface-dry condition divided by the mass of water of the same volume. The test methods are specified in JIS A 1109 and JIS A 1110.	specific gravity in saturated surface-dry condition (aggregate)
3015	Specific gravity in absolute dry condition (aggregate)	ZEKKANHIJŪ (KOTSUZAI NO)	The value of mass of aggregate in absolute-dry condition divided by the mass of water of the same volume.	Specific gravity in absolute dry condition (aggregate)
3016	Percentage of absolute volume (aggregate)	JISSEKIRITSU (KOTSUZAI NO)	Percentage of absolute volume of aggregate filled in a vessel to the volume of the vessel. The test method is specified in JIS A 1104.	percentage of absolute volume (aggregate)
3017	Test for unit weight (aggregate)	TANIYŌSEKI SHITSURYŌ SHIKEN (KOTSUZAI NO)	The test for measuring unit weight (aggregate) and it is specified in JIS A 1104.	test for unit weight (aggregate)
3018	Fineness modulus (aggregate)	SORYŪRITSU (KOTSUZAI NO)	The value of sum of mass percentages of the total samples retained on each sieve divided by 100 when the sieve analysis is carried out by using a set of sieves of 80, 40, 20, 10, 5, 2.5, 1.2, 0.6, 0.3, 0.15 mm.	fineness modulus (aggregate)
3019	Sieve analysis	FURUIWAKE SHIKEN	The test to obtain mass percentage of the sample passed each sieve or that retained on each sieve when screening by using a set of standard sieves to obtain the grading distribution of aggregate, and it is specified in JIS A 1102.	sieve analysis

No.	Term	Reading	Definition	Reference
				Equivalent English
3020	Standard (test) sieve	HYŌJUNFURUI	The sieve specified in JIS Z 8801.	standard (test) sieve
3021	Maximum size (coarse aggregate)	SAIDAI SUMPŌ (SOKOTSUZAI NO)	The size of coarse aggregate indicated by size of sieve of the minimum size of the sieves through which mass of 90 % or more passes.	maximum size (coarse aggregate)
3022	Test for percentage of soft particles (coarse aggregate)	NANSEKIRYŌ SHIKEN (SOKOTSUZAI NO)	The test to judge the amount of soft particles contained in aggregate and it is specified in JIS A 1126.	test for percentage of soft particles (coarse aggregate)
3023	Test for amount of material passing standard sieve 74 μm in aggregates	ARAI SHIKEN (KOTSUZAI NO)	The test to screen on sieve while flowing water to measure the amount of min particles contained in aggregate and it is specified in JIS A 1103.	test for amount of material passing standard sieve 74 μm in aggregates.
3024	Abrasion test (coarse aggregate)	SURIHERI SHIKEN (SOKOTSUZAI NO)	The test to judge the abrasion resistance of aggregate by measuring abrasion loss of aggregate at a specified number of revolution with applying friction to the aggregate in a rotating drum and it is specified in JIS A 1121.	abrasion test (coarse aggregate)
3025	Test for clay lumps (in aggregate)	NENDOKAI SHIKEN (KOTSUZAICHU NO)	The test to obtain the amount of clay lumps contained in aggregate and it is specified in JIS A 1137.	test for clay lumps (in aggregate)

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No.	Term	Reading	Definition	Reference
				Equivalent English
3026	Organic impurities test (sand)	YŪKI FUJUNBUTSU SHIKEN (SUNA NO)	The test to determine the approximate harmful amount of organic impurities contained in sand to be used in mortar or concrete and it is specified in JIS A 1105.	organic impurities test (sand)
3027	Test for chloride content (sand)	ENKABUTSU NO SHIKEN (SUNA NO)	The test to carry out the quantitative analysis of chlorides contained in sand by using reagent and it is specified in JIS A 5002.	test for chloride content (sand)
3028	Workability	WĀKABIRICHĪ	The property of not yet solidified concrete indicated by degree of difficulty of working depending on consistency and the resistance against separation of material required for making uniform concrete.	workability
3029	Consistency	KONSHISU- TENSĪ	The property of not yet solidified concrete indicated by degree of softness depending mainly on unit water quantity.	consistency
3030	Slump	SURANPU	The degree of softness of not yet solidified concrete or the like expressed by lowering (cm) from the top measured immediately after raising slump cone. The test method is specified in JIS A 1101.	slump
3031	Test for unit weight (concrete)	TAN'IOSEKI SHITSURYŌ SHIKEN (KONKURĪTO NO)	The test to measure the unit weight of concrete and it is specified in JIS A 1116.	test for unit weight (concrete)

No.	Term	Reading	Definition	Reference
				Equivalent English
3032	Flow	FURŌ	The measure to determine the fluidity depending on the spreading of diameter of concrete and the like when impacts of specified number of times are given with removing upward the cone after filling, while tamping by specified number of times, not yet solidified mortar, cement paste, concrete, etc. in the specified cone placed on a steel sheet table.	flow
3033	Finishability	FINISSHA-BIRITI	The property of not yet solidified concrete indicating difficulty of workability in the case of finishing the surface of concrete to the required flatness and smoothness.	finishability
3034	Bleeding	BURĪJINGU	Phenomenon for a portion of mixing water to raise by liberation due to settling or segregation of solid substances in not yet solidified concrete or mortar.	bleeding
3035	Segregation	BUNRI	Phenomenon for the distribution of several materials to become non uniform during transportation, placing or after placing of fresh concrete.	segregation
3036	Air content	KŪKI RYŌ	Percentage of volume of air bubbles contained in cement paste or mortar in the concrete to the total volume of concrete.	air content

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No.	Term	Reading	Definition	Reference
				Equivalent English
3037	Entrapped air	ENTORAPPUTO-EĀ	Air bubbles contained in concrete originally, not brought in concrete artificially.	entrapped air
3038	Entrained air	ENTORENDO-EĀ	Independent min bubbles of air made artificially in concrete by using air entraining agent or chemical admixture having entraining action.	entrained air
3039	Test piece, specimen	KYŌSHITAI	Sample of concrete prepared to carry out each test.	test piece, specimen
3040	Cylindrical test piece, cylindrical specimen	ENCHŪKEI KYŌSHITAI	Cylindrical specimen to be used for strength test or the like of concrete and others specified in JIS A 1132.	cylindrical test piece, cylindrical specimen
3041	Capping	KYAPPINGU	Finishing the surface of specimen for compressive strength test to flatness and smoothness by using proper material.	capping
3042	Compressive strength	ASSHUKU KYŌDO	The value of the maximum compressive load to which the specimen is able to withstand divided by the sectional area perpendicular to compressive load of the specimen. The test method is specified in JIS A 1108.	compressive strength
3043	Tensile strength	HIPPARI KYŌDO	The value of the maximum tensile load to which the specimen is able to withstand divided by sectional area perpendicular to tensile load of the specimen or the value to be obtained according to JIS A 1113.	tensile strength

No.	Term	Reading	Definition	Reference
				Equivalent English
3044	Flexural strength, modulus of rupture	MAGE KYŌDO	The value of the maximum bending moment to which the specimen is able to withstand divided by section modulus of the specimen. The test method is specified in JIS A 1106.	flexural strength, modulus of rupture
3045	Shear strength	SENDAN KYŌDO	The value of the maximum load along the shearing section divided by the sectional area of the shearing section.	shear strength
3046	Bearing strength	SHIATSU KYŌDO	The value of the maximum compressive load endurable when received partially the compressive load divided by the load-working area.	bearing strength
3047	Bond strength	FUCHAKU KYŌDO	The value of force endurable at the jointing surface of two materials such as reinforcement and concrete, mortar and concrete, etc. divided by the area of jointing surface.	bond strength
3048	Non-destructive test	HIHAKAI SHIKEN	The test to judge several properties of concrete without breakage.	non-destructive test
3049	Creep	KURĪPU	Phenomenon where the strain excluding elastic strain and drying shrinkage strain increases depending on time in the condition applied with stress.	creep
3050	Drying shrinkage	KANSŌ SHŪSHUKU	Phenomenon where the length of hardened concrete shrinks by drying.	drying shrinkage

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No.	Term	Reading	Definition	Reference
				Equivalent English
3051	Shrinkage crack	KANSŌ HIBIWARE	Crack caused in concrete accompanied by drying shrinkage.	shrinkage crack
3052	Neutralization	CHŪSEIKA	Phenomenon for the hardened concrete to lose gradually the alkalinity by receiving the action of carbon dioxide gas in air.	neutralization
3053	Durability	TAIKYŪSEI	Property of concrete able to resist weathering action, chemical attack, mechanical damage, etc.	durability
3054	Freezing and thawing test	TŌKETU YŪKAI SHIKEN	The test to examine the resistance when the concrete is applied with repeated action of artificial freezing and thawing.	freezing and thawing test
3055	Alkali-aggregate reaction	ARUKARI KOTSUZAI HANNO	Phenomenon where concrete blisters to cause cracks or rupture due to reaction in long term of certain kind of aggregate with cement and other alkalies.	alkali-aggregate reaction
3056	Water-tightness	SUIMITSUSEI	Resistance to intrusion or transmission of water into inside of concrete.	water-tightness
3057	Permeability test	TŌSUI SHIKEN	The test to obtain the velocity of water travelling inside the concrete by pressure difference.	permeability test
3058	Water cement ratio	MIZU SEMENTOHI	Mass ratio or mass percentage of water quantity to cement quantity in the paste contained in concrete or mortar immediately after mixing.	water cement ratio

No.	Term	Reading	Definition	Reference
				Equivalent English
3059	Cement water ratio	SEMENTO MIZUHI	Mass ratio of cement quantity to water quantity in the paste contained in concrete or mortar immediately after mixing.	cement water ratio
3060	Laitance	REITANSU	A layer of non-hardening substances formed on the surface of concrete by rise of inner min particles together with bleeding water accompanied by bleeding after placing concrete.	laitance
3061	Efflorescence	EFURORESSENSU	White substances formed on a surface of hardened concrete.	efflorescence
3062	Proportion, mix	HAIGŌ CHŌGŌ	Using proportion or amount of using of each material when making concrete.	proportion, mix
3063	Design strength	SEKKEI KIJUN KYODO	Strength of concrete used as reference in design calculation.	design strength
3064	Proportioning strength	HAIGŌ KYŌDO, CHŌGŌ KYŌDO	Strength to be target in the case of deciding proportion of concrete.	proportioning strength
3065	Designated strength	SHITEI KYODO	The value of design reference strength corrected with atmospheric temperature.	designated strength
3066	Nominal strength	YOBI KYŌDO	Division of strength of concrete specified in JIS A 5308.	nominal strength
3067	Specified mix	SHIHŌ HAIGŌ, KEIKAKU CHŌGŌ	Proportion to be able to obtain the concrete of specified quality and designated by specification or by the engineer in charge. It is expressed by using amounts of materials in 1 m <sup>3</sup> of finished mixed concrete.	specified mix

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No.	Term	Reading	Definition	Reference
				Equivalent English
3068	Field mix, job mix	GENBA HAIGŌ, GENBA CHŌGO	Proportion specified depending on the condition of materials in the field or measuring method in order to be able to obtain concrete of specified mix.	field mix, job mix
3069	Quantity of material per unit volume of concrete	TAN'I RYŌ	Quantity of material to be used for making 1 m <sup>3</sup> of concrete. Quantity of cement, quantity of water, quantity of coarse aggregate respectively per unit volume of concrete, and the like.	quantity of material per unit volume of concrete
3070	sand percentage	SAIKOTSUZAI RITU	The value expressed by percentage of absolute volume ratio of amount of fine aggregate to total aggregates in the concrete.	sand percentage
3071	washing analysis (concrete)	ARAI BUNSEKI SHIKEN (KONKURĪTO NO)	The test to obtain proportion ratio of each material by washing with water the fresh concrete through sieve and it is specified in JIS A 1112.	washing analysis (concrete)
3072	Precooling	PUREKŪRINGU	Cooling the materials of concrete to lower the mixing finish temperature of concrete.	precooling
3073	Prewetting	PUREUETCHI-NGU	Allowing to absorb water sufficiently by spraying water or immersing in water preliminarily at the time of using lightweight aggregate.	prewetting

(4) Equipment and Execution of Works

No.	Term	Reading	Definition	Reference
				Equivalent English
4001	Batch mixer	BATCHI MIKISA	A mixer to mix concrete materials for each batch.	batch mixer
4002	Continuous mixer	RENZOKUNERI MIKISA	A mixer into which the concrete materials are fed successively and mixed continuously and from which the mixed product is able to be discharged.	continuous mixer
4003	Gravity type mixer	JŪRYOKUSHIKI MIKISA	A mixer of the type in which the concrete is sucked up by rotation of mixing shell of the mixer and then fallen by self weight to be mixed.	gravity type mixer
4004	Tilting mixer	KAKEISHIKI MIKISA	A mixer of the type in which the concrete is mixed by rotation of mixing shell of concaved square shape and from which the mixed concrete is discharged by tilting the mixing shell. A kind of gravity type mixers and it is specified in JIS A 8602.	tilting mixer
4005	Drum mixer	DORAMU MIKISA	A mixer of the type in which the concrete is mixed by rotation of mixing shell of circular cylinder shape and from which the mixed concrete is discharged without tilting the mixing shell. It is a kind of gravity type mixers and is specified in JIS A 8601.	drum mixer
4006	Forced mixing type mixer	KYŌSEINERI MIKISA	A mixer of the type to mix forcedly concrete by rotating the vane by power. It is specified in JIS A 8603.	forced mixing type mixer

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No.	Term	Reading	Definition	Reference
				Equivalent English
4007	Mixing	NERIMAZE	Mixing the concrete materials to make uniform.	mixing
4008	Remixing	NERINAOSHI	Mixing again in the case where concrete does not begin to harden but a certain period of time has elapsed after mixing or where the materials have segregated.	remixing
4009	Retempering	NERIKAESHI	The working to mix again when the concrete has begun hardening.	retempering
4010	Trial mixing	TAMESHINERI	Mixing to be carried out to examine whether the specified concrete can be obtained or not at the designed proportion.	trial mixing
4011	Ready-mixed concrete	REDĒMIKUSOTO KONKURĪTO	Concrete in unhardened state able to be purchased at any time from factory having arranged concrete manufacturing equipment. It is specified in JIS A 5308.	ready-mixed concrete
4012	Agitator	AJITĒTA	A machine to mix by agitation to prevent segregation before placing the unhardened concrete.	agitator
4013	Concrete pump	KONKURĪTO PONPU	An apparatus which forces unhardened concrete mechanically and feeds continuously through a pipeline.	concrete pump
4014	Concrete placer	KONKURĪTO PURĒSA	An apparatus which sends out the unhardened concrete by compressed air through a pipeline.	concrete placer

No.	Term	Reading	Definition	Reference
				Equivalent English
4015	Chute	SHŪTO	A device of trough or tube shape to conduct the unhardened concrete by flowing from a higher to a lower place.	chute
4016	Placing	UCHIKOMI	Throwing the fresh concrete in the specified place to fill.	placing
4017	Compaction	SHIMEKATAME	The process to make compact with reducing voids by tamping, tapping, or vibrating the placed concrete.	compaction
4018	Vibrator	SHINDŌKI	A machine to compact the fresh concrete by giving oscillation. It is specified in JIS A 8610 and JIS A 8611.	vibrator
4019	Tamping	TANPINGU	The operation of compacting by blowing the surface of concrete from the time of placing concrete for floor or pavement until hardening.	tamping
4020	Honeycomb	MAMEITA	An ununiform part having many voids caused by collection of only coarse aggregates in a part of hardened concrete.	honeycomb
4021	Precast concrete	PUREKYASUTO-KONKURĪTO	Concrete made able to be used as member, which is produced in a factory or the working field.	precast concrete
4022	Prepacked concrete	PUREPAKKUDO-KONKURĪTO	Concrete produced by filling coarse aggregate preliminarily in a form and then injecting mortar between the coarse aggregates.	prepacked concrete

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No.	Term	Reading	Definition	Reference
				Equivalent English
4023	Shotcrete	FUKITSUKE KONKURĪTO	Concrete produced by spraying to the specified place with pneumatically feeding in a hose by using compressed air.	shotcrete
4024	Con- struction joint	UCHITSUGIME	Joint of new and old concrete produced at newly placing concrete in contact with hardened or commenced to harden concrete.	construction joint
4025	Expansion joint	BŌCHŌ MEJI	Concrete joint provided against compressive stress due to expansion.	expansion joint
4026	Con- traction joint	SHŪSHUKU MEJI	Concrete joint provided against tensile stress due to shrinkage.	contraction joint
4027	Dummy joint	MEKURAMEJI	A joint created by forming only a groove in the surface of concrete.	dummy joint
4028	Grout	GURAUTO	Cement paste or mortar improved of filling property by adding admixture in order to fill in a thin clearance.	grout
4029	Grouting	GARAUCHINGU	Work to inject grout.	grouting
4030	Curing	YŌJŌ	Procedure to secure proper temperature and humidity and to protect from outer force in order to develop sufficiently the hardening action of concrete.	curing
4031	Wet- curing	SHITSUJUN YŌJO	Curing with maintaining the surface and inside of concrete in wet state.	wet-curing

No.	Term	Reading	Definition	Reference
				Equivalent English
4032	Standard curing	HYOJUN YŌJŌ	Curing with maintaining mortar and concrete in water at about 20°C or in air near 100 % in humidity.	standard curing
4033	Water curing	SUICHŪ YŌJŌ	Curing with concrete immersing in water.	water curing
4034	Membrane curing	MAKU YŌJŌ	Curing with protecting evaporation of water content by making membrane on the surface after placing concrete.	membrane curing
4035	Accelerated curing	SOKUSHIN YŌJŌ	Curing accelerated in hardening and development of strength of concrete by raising temperature and adding pressure.	accelerated curing
4036	Steam curing	JŌKI YŌJŌ	Accelerated curing by use of steam at a high temperature.	steam curing
4037	Atmospheric pressure steam-curing	JŌATSU JŌKI YŌJŌ	Steam curing to be carried out under atmospheric pressure.	atmospheric pressure steam-curing
4038	High pressure steam curing, autoclave-curing	KŌATSU JŌKI YŌJŌ	Steam curing to be carried out by using high temperature steam at 1 or more atmospheric pressure in a high pressure vessel.	high pressure steam curing, autoclave-curing
4039	Pipe cooling	PAIPU-KŪRINGU	Procedure to cool concrete by passing cool water in the pipe embedded in the concrete.	pipe cooling

No.	Term	Reading	Definition	Reference
				Equivalent English
4040	Vacuum concrete	SHINKŪ KONKURITO	Concrete produced by lowering the inside pressure with setting a vacuum mat or the like on the surface after placing concrete so that water in excess is sucked out and pressure is applied by atmospheric pressure.	vacuum concrete
4041	Formwork, shuttering	KATAWAKU	General term of temporary constructions to maintain the placed concrete at the specified shape and dimensions and to support until the concrete reaches a proper strength.	formwork, shuttering
4042	Sheathing	SEKIITA	A part of formwork of plates of wood, metal or the like in direct contact with concrete.	sheathing
4043	Support	SHIHOKŌ	A temporary construction to fix the sheathing at the specified position which is a part of formwork.	support
4044	Cover (reinforcement)	KABURI (TEKKIN NO)	The minimum distance between the surface of reinforcement and the surface of concrete at its outside.	cover (reinforcement)

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**Applicable Standards:**

- JIS A 1101-Method of Test for Slump of Concrete
- JIS A 1102-Method of Test for Sieve Analysis of Aggregate
- JIS A 1103-Method of Test for Amount of Material Passing Standard Sieve 74  $\mu\text{m}$  in Aggregates
- JIS A 1104-Method of Test for Unit Weight of Aggregate and Solid Content in Aggregate
- JIS A 1105-Method of Test for Organic Impurities in Fine Aggregate
- JIS A 1106-Method of Test for Flexural Strength of Concrete
- JIS A 1108-Method of Test for Compressive Strength of Concrete
- JIS A 1109-Method of Test for Specific Gravity and Absorption of Fine Aggregate
- JIS A 1110-Method of Test for Specific Gravity and Absorption of Coarse Aggregate
- JIS A 1112-Method of Test for Washing Analysis of Fresh Concrete
- JIS A 1113-Method of Test for Splitting Tensile Strength of Concrete
- JIS A 1116-Method of Test for Unit Weight and Air Content (Gravimetric) of Fresh Concrete
- JIS A 1121-Method of Test for Abrasion of Coarse Aggregate by Use of the Los Angeles Machine
- JIS A 1122-Method of Test for Soundness of Aggregate by Use of Sodium Sulfate
- JIS A 1126-Method of Test for Soft Particles in Coarse Aggregate by Use of Scratch Tester
- JIS A 1132-Method of Making and Curing Concrete Specimens
- JIS A 1137-Method of Test for Clay Contained in Aggregate
- JIS A 5002-Light Weight Aggregates for Structural Concrete
- JIS A 5308-Ready-Mixed Concrete
- JIS A 6201-Fly Ash
- JIS A 8601-Drum Type Mixers
- JIS A 8602-Tilting Mixers

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**Applicable Standards:**

JIS A 8603-Forced Mixing Type Mixers

JIS A 8610-Internal Vibrators for Concrete

JIS A 8611-Form Vibrators for Concrete

JIS G 3112-Steel Bars for Concrete Reinforcement

JIS R 5201-Physical Testing Methods of Cement

JIS R 5202-Method for Chemical Analysis of Portland Cement

JIS R 5203-Testing Method for Heat of Hydration of Cement

JIS R 5210-Portland Cement

JIS R 5211-Portland Blast-furnace Slag Cement

JIS R 5212-Portland Pozzolan Cement

JIS R 5213-Portland Fly-ash Cement

JIS Z 8801-Test Sieves

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